CLAIMS

What is claimed is:

1.   A NO_x control composition suitable for use in a fluidized catalytic cracking
process, said composition comprising a component which contains (i) an acidic oxide
support, (ii) an alkali metal and/or alkaline earth metal or mixtures thereof, (iii) a
transition metal oxide having oxygen storage capability, and (iv) a transition metal
selected from Groups Ib and/or IIb of the Periodic Table.

2.   The composition of claim 1 wherein said acidic oxide support contains
alumina.

3.   The composition of claim 2 wherein said acidic oxide support is selected from
the group consisting of alumina, silica alumina, and lanthana alumina.

4.   The composition of claim 3 wherein said oxide support is a silica alumina.

5.   The composition of claim 4 wherein said silica alumina has an alumina:silica
mole ratio of about 3-50:1.

6.   The composition of claim 1 wherein said oxygen storage oxide contains ceria.

7.   The composition of claim 1 wherein said component contains an alkali metal
selected from the group consisting of sodium, potassium, and mixtures thereof.

8.   The composition of claim 1 wherein said component contains Group Ib
transition metal selected from the group consisting of copper, silver, and mixtures
thereof.

9.   The composition of claim 1 wherein said component contains about 1-10 parts by weight (measured as alkali/alkaline earth metal oxide) of said alkali/alkaline earth metal per 100 parts by weight of said acidic oxide support material.

10.   The composition of claim 1 wherein said component contains at least about 1 part by weight of said oxygen storage oxide per 100 parts by weight of said acidic oxide support material.

11.   The composition of claim 10 wherein said component contains about 2 to 50 parts by weight of said oxygen storage oxide per 100 parts by weight of said acidic oxide support material.

12.   The composition of claim 1 wherein said component contains about 0.01-5 parts by weight total of said Group Ib and/or IIb metal (measured as metal oxide) per 100 parts by weight of said acidic oxide support material.

13.   The composition of claim 1 wherein said component consists essentially of constituents (i) - (iv).

14.   The composition of claim 13 wherein said composition consists essentially of said component and said composition is in the form of particles.

15.   A fluid cracking catalyst comprising (a) a cracking component suitable for use in cracking hydrocarbons, and (b) a component which contains (i) an acidic oxide support, (ii) an alkali metal and/or alkaline earth metal or mixtures thereof, (iii) a transition metal oxide having oxygen storage capability, and (iv) a transition metal selected from Groups Ib and/or IIb of the Periodic Table.

16.   The cracking catalyst of claim 15 wherein said cracking catalyst comprises an admixture of component (a) in particulate form and component (b) in particulate form.

17.   The cracking catalyst of claim 15 wherein said cracking catalyst is a particulate composition comprising integral particles which contain both components (a) and (b).

18.   A method of cracking a hydrocarbon feedstock into lower molecular weight components, said method comprising contacting said hydrocarbons with a cracking catalyst comprising (a) a cracking component suitable for use in cracking hydrocarbons, and (b) a component which contains (i) an acidic oxide support, (ii) an alkali metal and/or alkaline earth metal or mixtures thereof, (iii) a transition metal oxide having oxygen storage capability, and (iv) a transition metal selected from Groups Ib and/or IIb of the Periodic Table, at elevated temperature whereby said lower molecular weight components are formed.

19.   The method of claim 18 wherein said catalyst is fluidized during said contacting and said method further comprises recovering used cracking catalyst from said contacting step and treating said used catalyst under conditions suitable to regenerate said catalyst.

20.   The method of claim 18 wherein said hydrocarbon feedstock contains at least 0.1 wt.% nitrogen.